

NEW GENERA AND SPECIES OF AUSTRALIAN THYSANOPTERA.¹

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IN this paper descriptions are given of four new genera and twenty-four new species of thrips collected by Mr. Alexandre A. Girault in the coastal region of North Queensland. As the specimens were all taken by sweeping, little data appears on life habits or food plants.

The author wishes to announce the intention of continuing his studies on Australian Thysanoptera with the object of working gradually toward the preparation of a monographic work, and to state that he will be pleased to receive specimens for determination. Thrips should be collected directly into numbered tubes of 70 per cent. ethyl alcohol by means of a small camel's-hair brush; and full data, giving locality, date, collector, and any possible notes on ecology, should always be entered under a corresponding number in a note-book carried for the purpose, or, in the case of flower-inhabiting species, on an envelope containing a specimen of the plant from which the insect was taken. Care should be taken to use a sufficient quantity of alcohol, and particularly to force down into the liquid a tightly fitting wad of cotton, so that no air bubble will remain to flow about and break the specimens during shipment.

One set of types has been retained by the author for reference in further work, while another set has been deposited in the Queensland Museum.

RHIPIDOTHRIPS CINCTUS sp. nov.

Female (macropterous).—Length about 1.6 mm. Colour light brown, with head, abdominal segments 6-10, and middle and hind tibiæ darker; abdominal segments 4 and 5, and antennal segments 3 and 4, almost white; fore wings white with apex brown and with a transverse brown band in apical third.

Head almost smooth behind eyes, vertex transversely striate; occiput and cheeks with about 30 short, distinct bristles. Eyes longer than their distance from back of head and slightly narrower than their interval. Ocelli about equidistant. Antennæ with segments 7-9 somewhat more compactly joined than the others; segments 1, 2, and 6-9 brown, 2 paler than 1; 3 and 4 nearly white, 4 infuseate laterally. Maxillary palpi three-segmented.

¹ With a catalogue of the North American species of *Haplothrips* and *Liothrips*.

Pronotum without sculpture, but with numerous short bristles. Mesoscutum very closely transversely striate; metascutum longitudinally striate at sides, reticulate at middle. Wings and legs of normal structure.

Abdomen of normal structure, very faintly sculptured at sides near base.

Measurements of holotype:—Length 1.57 mm.; head, length 0.156 mm., width 0.173 mm.; prothorax, length 0.138 mm., width 0.228 mm.; pterothorax, width 0.276 mm.; fore wing, length 0.828 mm., width near base 0.096 mm., at middle 0.108 mm.; abdomen, width 0.456 mm.

Antennal segments :	1	2	3	4	5	6	7	8	9
Length (μ)	30	48	83	72	45	31	33	20	15
Width (μ)	36	28	22	22	21	21	20	14	7

Total length of antenna, 0.377 mm.

Described from two females taken by sweeping in fields at Cooktown, North Queensland, February 4 and 24, 1912, by Mr. A. A. Girault.

This is the only species of the genus known from outside Europe, and may be known by the banded wings and abdomen.

PHYSOTHRIPS MACULICOLLIS sp. nov.

Female (macropterous).—Length about 1.4 mm. General colour brownish yellow; abdomen (especially posteriorly) and pterothorax infusate; head with a dark vitta behind eyes along cheeks; prothorax with several obscure dark spots and a larger subbasal blotch; antennae blackish brown, with the two basal segments paler and segment 3 almost clear yellow; fore wings light gray in basal third, much darker beyond; legs brownish yellow, with mid and hind femora brown.

Head only slightly wider than long, subangulate and widest just behind eyes, sides converging to base; occiput with a number of slightly anastomosing transverse lines; frontal costa narrow, with a shallow notch; interocellar bristles half as long as eyes, situated outside the ocellar triangle; all other cephalic bristles minute. Eyes longer than cheeks and narrower than their interval. Ocelli nearly equidistant, pigment red. Antennae about 2.25 times as long as head, of normal structure.

Prothorax about 1.15 times the length of head, evenly striate with anastomosing lines visible only under high magnification; posterior angular bristles half the length of pronotum; other bristles minute, brown, distinct. Wings of fore pair with about seven dark bristles in basal third of anterior vein and three widely separated ones beyond; posterior vein with a series of about seventeen bristles.

Abdomen of normal form, almost without sculpture; segment 8 with a dorsal posterior comb which is broadly interrupted at middle; segment 10 divided above in apical three-fifths.

Measurements of holotype:—Length 1.37 mm.; head, length 0.156 mm., width 0.175 mm.; prothorax, length 0.180 mm., width 0.235 mm.; pterothorax, width 0.308 mm.; fore wing, length 0.936 mm., width near base 0.094 mm., at middle 0.060 mm.; abdomen, width 0.362 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	30	47	72	70	51	62	8	11
Width (μ)	33	28	24	20	17	18	7	6
Total length of antenna, 0.351 mm.								

Described from two females taken by sweeping in forest at Nelson, N.Q., April 28 and May 21, 1914, by Mr. A. A. Girault.

Structurally very close to *Ph. pictus*, but easily known by the obscurely maculate prothorax and the dark postocular vitta.

HELIOTHRIPS SCULPTILIS sp. nov.

Female (macropterous).—Length about 1 mm. Colour blackish brown, thorax paler, head yellow in front of ocelli; knees, tarsi, ends of tibiae, and basal half of antennal segments 3-5, nearly white: fore wings light brown, with a narrow white band beyond scale and one in eighth tenth, the apex pale.

Head closely and finely reticulate, occiput with exceedingly fine rugae between the lines of reticulation; frontal costa nearly as wide as first antennal segment. Eyes not protruding, about twice as long as their distance from posterior margin of head. Ocelli equidistant. Antennae almost exactly as in *H. phascoli* (see Psyche, vol. xix, 1912, Pl. 8, fig. b). Maxillary palpi two-segmented.

Prothorax reticulated and roughened like occiput. Mesoscutum paler than other pterothoracic plates, with sides and posterior portion closely striate, the remainder sculptured like occiput. Fore wings with veins and bristles as in *H. phascoli* (i.e., fig. a).

Abdomen of normal structure; tergites 1-8 closely striate at sides, the striae transverse toward middle of segment and longitudinal at sides, as in *H. phascoli* (i.e., fig. c). Tergite 10 divided in apical half.

Measurements of holotype:—Length 0.984 mm.; head, length 0.120 mm., width 0.157 mm.; prothorax, length 0.096 mm., width 0.178 mm.; pterothorax, width 0.240 mm.; fore wing, length 0.698 mm., width near base 0.075 mm., at middle 0.048 mm.; abdomen, width 0.294 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	18	38	46	41	32	24	12	30
Width (μ)	24	29	21	21	19	17	8	5
Total length of antenna, 0.241 mm.								

Described from one female taken by "sweeping in an old Chinese garden, overgrown partly with weeds," Proserpine, N.Q., November 3, 1912, by Mr. A. A. Girault.

The striate abdomen and the colour of the wings are the most distinctive characters.

PTEROTHRIPS gen. nov.

(πτερον, wing; θρῦψ, a wood-worm.)

Body deeply reticulate. Head large, subquadrangular, much broader than long, strongly constricted at base; vertex transverse, slightly elevated between eyes but not surpassing them anteriorly. Ocelli approximate, elevated, the anterior

ocellus directed forward, scarcely overhanging; posterior ocelli directed laterally. Antennae short, eight-segmented, slender beyond segment 2, which is broad and goblet-shaped; sense-cones simple; style short. Maxillary palpi two-segmented. Prothorax short, without strong bristles, lateral margin explanate, particularly in anterior half. Wings of fore pair pubescent only at margins, with a prominent "ring vein," one longitudinal vein, and a cross-vein near base; anterior margin bare, without fringe or spines; median vein without bristles. Legs short. Abdomen of normal structure in male, without expanded, fan-shaped bristles on segment 10.

Genotype :—*Pterothrips quadratus* sp. nov.

Close to *Rhipiphorothrips*, which it closely resembles in the venation of the fore wings and the complete absence of bristles and hairs from the costal margin, but certainly distinct by the transverse vertex and the armature of the tenth abdominal segment.

PTEROTHRIPS QUADRATUS sp. nov.

Male (macropterus).—Length about 0.9 mm. Body thickly chitinated. Colour almost testaceous, with head, mesoscutum, part of metascutum, and sides of pterothorax, blackish brown; tip of abdomen pale brown; antennae uniform pale yellow, with apical half of segment 6 and all of 7 and 8, blackish brown; legs yellow, femora very slightly darker at sides; fore wings with scale, basal portion and veins, brownish yellow, remainder clear.

Head very prominently and heavily reticulate, blunt in front, broadest across eyes, cheeks sinuately converging to neck, which is sharply delimited by an anteriorly arcuate, raised line. Eyes about twice as long as their distance from posterior margin of head, less than half as wide as their interval. Ocelli nearly equidistant, ocellar area elevated. Antennae about twice the length of head; segments 4 and 5 with short, abrupt pedicels; 3 and 4 each with single, stout sense-cone arising from pit on lower outer apical surface.

Prothorax quadrangular, obscurely reticulate; lateral margin thin and broad anteriorly. Mesoscutum and triangular middle portion of mesonotum deeply reticulate like head. Legs roughened.

Abdomen reticulate, especially at sides, segments 1-8 with a more or less scalloped, transverse, sub-basal line; tergite 9 with two pairs of long bristles whose bases form a semicircle.

Measurements of holotype :—Length 0.924 mm.; head, length 0.108 mm., width 0.180 mm.; prothorax, length 0.120 mm., width 0.198 mm.; pterothorax, width 0.234 mm.; fore wing, length 0.624 mm., width near base 0.066 mm., at middle 0.044 mm.; abdomen, width 0.247 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	(18)	(42)	49	31	27	26	11	15
Width (μ)	(24)	36	19	19	20	18	9	5

Total length of antenna, 0.219 mm.

Described from one male taken by sweeping at Pentland, N Q., January 6, 1913, by Mr. A. A. Girault.

The quadrangular head and prothorax have suggested the specific name.

PHIBALOTHRIPS gen. nov.

(φίβαλος,² slender; θρῖψ, a wood-worm).

Body deeply reticulate. Head longer than broad, abruptly and strongly constricted at base; vertex elevated between eyes and produced. Eyes strongly protruding in front, not longer than cheeks. Ocelli approximate, the anterior ocellus overhanging and directed forward, the posterior ocelli directed laterally. Antennæ seven-segmented, very slender beyond segment 2, which is broad and goblet-shaped; 5-7 compactly united in a fusiform mass, 7 needle-like; sense-cones simple. Maxillary palpi two-segmented. Prothorax slightly transverse, without strong bristles; lateral margin explanate. Wings very slender; fore wings with complete marginal vein, only; costal margin with neither fringe nor bristles. Legs short and stout. Abdomen unusually long and slender, apical segments more heavily chitinized; segments 2 and 9 longest; 9 distinctly longer than 10 and with three pairs of strong, dorso-lateral bristles, of which the middle pair is slightly longer than segment 10, and twice the length of the lateral pairs; terminal segment conical, rounded at tip, divided in its entire length.

Genotype:—*Phibalothrips exilis* sp. nov.

Phibalothrips is a member of the *Heliothrips* group, and is closely related to *Retithrips*, *Rhipiphorothrips*, and *Pterothrips*. With all of them it agrees in lacking the anterior fringe of the fore wings. The antennal structure is distinctive, as is also the slender body and the absence of longitudinal wing-veins.

PHIBALOTHRIPS EXILIS sp. nov.

Female (macropterous).—Length about 1.1 mm. Head, prothorax, mesothorax, scutellum, and antennal segments 6 and 7, dark brown; remainder lemon yellow, with sides of metathorax and of abdominal segments 9 and 10, tinged with orange.

Head longer than wide, sides almost perfectly straight to the rectangular neck-like constriction; deeply reticulate above, with two smoother chevron-shaped areas extending from side to side; frontal costa narrow, notched. Eyes anteriorly acutely produced and protruding, considerably surpassing the vertex and the base of the first antennal segment.

Prothorax only 1.25 times as wide as long, almost smooth, with a narrow band of reticulation near anterior margin and with a few minute bristles; lateral flange smooth. Mesothorax sculptured both above and below. Metathorax smooth, except the very acute, reticulate scutellum. Legs yellow, reticulate. Wings almost colourless, washed with yellow along the veins.

Abdomen slender and elongate, reticulate except along median line; segments 3-8 with a serrate, subbasal line; posterior margins of tergites 1-8 serrate at sides with short, blunt teeth; tergites 2-7 with two median, posteriorly converging lines of sculpture.

² This word, though not commonly given in lexicons, is to be found in that of Constantine (1592).

Measurements of holotype:—Length 1.14 mm.; head, length 0.162 mm., width 0.140 mm.; prothorax, length 0.144 mm., width 0.180 mm.; pterothorax, width 0.180 mm.; fore wing, length 0.828 mm., width near base 0.060 mm., at middle 0.033 mm.; abdomen, width 0.264 mm.

Antennal segments :	1	2	3	4	5	6	7
Length (μ)	(24)	(45)	62	51	53	27	38
Width (μ)	24	33	17	15	18	13	4

Total length of antenna, 0.300 mm.

Described from one female taken by sweeping in forest at Nelson, N.Q., August 7, 1913, by Mr. A. A. Girault.

HAPLOTHRIPS Amyot and Serville, 1843.

1843. *Haplothrips* Amyot and Serville, Hist. Nat. Ins. Hém., p. 640. [Type *Phleothrips albipennis* Burmeister (= *Thrips aculeata* Fabricius teste Haliday), by monotypy.]
1895. *Anthothrips* Uzel, Mon. d. Ord. Thys., p. 237.
1899. *Anthothrips* Reuter, Acta Soc. Fauna Flora Fennica, vol. xvii, No. 2, pp. 17, 27.
1902. *Anthothrips* Hinds, Proc. U. S. Nat. Mus., vol. xxvi, p. 188.
1910. *Anthothrips* Trybom, Schultze: Zool. u. anthr. Ergebn. Forsch.-Reise westl. u. zentr. Südafr., bd. iv, lief. i, p. 172.
1912. *Haplothrips* Karny, Zool. Ann., vol. iv, p. 324.
1913. *Haplothrips* Schmutz, Sitzungsab. K. Akad. Wiss. Wien, Mathem.-naturw. Klasse, bd. cxxii, abt. i, pp. 1025, 1033.
1916. *Anthothrips* Watson, Ent. News, vol. xxvii, p. 129.

This genus now contains about fifty apparently valid species recorded from all portions of the world. They are very closely related among themselves and their separation is correspondingly difficult. One of the most satisfactory characters, in the writer's experience, for the differentiation of closely allied forms is the presence or absence of the sense-cone on the inner surface of the apex of the third antennal segment. In the critical examination of several thousand specimens of this genus, this character has been found absolutely constant, and in the following key it is used for the primary division of the genus.

Before proceeding with the synopsis and discussion of the Australian species of *Haplothrips*, it may be well to comment briefly on one of the papers cited above, namely, Mr. Watson's recent contribution to "Entomological News." On examination of this paper, it will be seen that the author has failed to employ the proper generic term for this genus, and has used instead a name which for four years had reposed in synonymy. In addition he adopts, in his key to six North American species, four synonymous names, while five additional North American species are completely overlooked. The new species described is a synonym of one characterised four years previously by the present writer. The corrected list of North American species, after adding one published since the appearance of Watson's paper, is as follows:—

1. *? bellus* Hood and Williams, Journ. N. Y. Ent. Soc., vol. xxiii, 1915, p. 125, pl. viii, figs. 2-5.
2. *faucci* Hood, Proc. Biol. Soc. Wash., vol. xxvii, 1914, p. 157, pl. 3, figs. 5, 6.
3. *flavipes* (Jones) Tech. Ser. 23, pt. i, Bur. Ent., U. S. Dept. Agr., 1912, p. 18, pl. v, figs. 5-7 (*Anthothrips*).

4. *gowdeyi* (Franklin), Proc. U. S. Nat. Mus., vol. xxxiii, 1908, p. 724, pl. lxiii, fig. 8, pl. lxiv, figs. 15, 16, pl. lxxv, fig. 23 (*Anthothrips*).
Anthothrips variabilis Crawford, Pomona Coll. Journ. Ent., vol. ii, 1910, p. 166, fig. 69, *a-e*.
5. *graminis* Hood, Proc. Biol. Soc. Wash., vol. xxv, 1912, p. 69, fig. 3.
Anthothrips floridensis Watson, Ent. News, vol. xxvii, 1916, p. 128, pl. vi, figs. 10-12.
6. *halophilus* Hood, Ins. Insc. Menstr., vol. iii, 1915, p. 29.
7. *jonesii* Karny, Zool. Ann., vol. iv, 1912, p. 344.
Anthothrips nigricornis Jones, Tech. Ser. 23, pt. i, Bur. Ent., U. S. Dept. Agr., 1912, p. 17, pl. v, figs. 1-4 (nec *A. nigricornis* Bagnall, 1910).
8. *malifloris* Hood, Proc. Biol. Soc. Wash., vol. xxix, 1916, p. 121.
9. *nubilipennis* Hood, Proc. Biol. Soc. Wash., vol. xxvii, 1914, p. 156, pl. 3, figs. 3, 4.
10. *ruber* (Moulton), Tech. Ser. 21, Bur. Ent., U. S. Dept. Agr., 1911, p. 48, pl. v, fig. 39, pl. vi, fig. 40 (*Trichothrips*).
11. *statices* (Haliday), Ent. Mag., vol. iii, 1836, p. 442 (*Phlaothrips*).
Phlaothrips nigra Osborn, Can. Ent., vol. xv, 1883, p. 154.
Phlaothrips armata Lindeman, Bull. Soc. Imp. Nat. Moscou, 1887, p. 335.
12. *verbasci* (Osborn), Proc. Iowa Acad. Sci., vol. iii, 1896, p. 228 (*Phlaothrips*).
Trichothrips femoralis Moulton, Tech. Ser. 12, pt. iii, Bur. Ent., U. S. Dept. Agr., 1907, p. 61, pl. v, fig. 44, pl. vi, figs. 45, 46.

Key to Australian Species.

a. Segment 3 of antenna with sense-cone on inner surface of apex.

b. Segments 3-6 of antenna lemon yellow, slightly infusate apically; wings of fore pair slender, slightly broadened at base and somewhat narrowed at middle, the bases of the three subbasal bristles forming a nearly straight line; about 6 (4-9) accessory hairs on posterior margin of fore wings *gowdeyi* (Franklin).

bb. Segments 3-6 of antenna blackish brown, 3 slightly paler at base and along outer surface; wings of fore pair broad at base and at apex, very much narrowed at middle, the bases of the three subbasal bristles forming an equilateral triangle; no accessory hairs on posterior margin of fore wings *varius* Hood.

aa. Segment 3 of antenna without sense-cone on inner surface of apex.

c. Segments 3-5 of antenna yellow, 4 and 5 very slightly infusate; segment 3 slender and about 1.9 times as long as greatest width, outline of outer surface nearly straight *anceps* Hood.

cc. Segments 3-5 of antenna blackish brown, 3 slightly paler at base and along outer surface; segment 3 moderately stout and about 1.5 times as long as greatest width, outline of outer surface strongly arcuate *froggatti* Hood.

HAPLOTHRIPS GOWDEYI (Franklin).

1908. *Anthothrips gowdeyi* Franklin, Proc. U. S. Nat. Mus., vol. xxxiii, p. 724, pl. lxiii, fig. 8, pl. lxiv, figs. 15, 16, pl. lxxv, fig. 23.
1910. *Anthothrips variabilis* Crawford, Pomona Coll. Journ. Ent., vol. ii, No. 1, p. 166, fig. 69, *a-e*.
1912. *Haplothrips gowdeyi* Hood, Proc. Biol. Soc. Wash., vol. xxv, p. 62 (Apr. 13).
1912. *Haplothrips variabilis* Karny, Zool. Ann., vol. iv, p. 326 (Apr. 15).
1912. *Haplothrips gowdeyi* idem, ibidem, p. 327.

1913. *Haplothrips gowdeyi* Hood, Ins. Insc. Menstr., vol. i, p. 152.

1916. *Anthothrips variabilis*, Watson, Ent. News, vol. xxvii, p. 129.

Originally described from Barbados and subsequently recorded from Cuba, Nicaragua, and Mexico by Crawford and from Porto Rico by the author, this species is represented in the Australian material by a series of seven females taken by Mr. Girault in North Queensland. These specimens, which were collected at Aloomba, July 7, 1912, at Halifax, February 28, 1913, and at Nelson, April 2 and 4, 1913, have been found indistinguishable from Neotropical and Nearectic specimens even after a careful study of a large series of specimens cleared in potassium hydroxide. In colour, form, and the multitudinous details of chitinous structure there is very little variation indeed, and I have no hesitation in declaring that we are here concerned with but a single species which, through the medium of commerce, has been distributed to many parts of the world; or which has persisted without modification in spite of complete geographic isolation.

The insect frequents flowers of many species, and the student is referred to the papers by Franklin and Crawford for their enumeration.

HAPLOTHRIPS VARIUS sp. nov.

Female (macropterous).—Length about 1.6 mm. Colour dark blackish brown with fore tarsi yellow and fore tibiae yellow apically; antennae brown, segments 1, 2, and 5-8 darkest; 3 slightly paler, particularly along outer surface and at base.

Head slightly longer than wide, sides nearly straight; vertex produced, the anterior ocellus overhanging and slightly surpassing frontal costa; postocular bristles blunt, two-thirds as long as eyes. Eyes one-third as long as head, slightly wider than their interval. Antennae of normal structure, segment 3 small, almost exactly as in *H. humilis* (see Proc. Biol. Soc. Wash., vol. xxvii, 1914, pl. iv, fig. 2), but with a sense-cone on inner surface; segment 4 large; 7 and 8 rather closely united.

Prothorax smooth; all usual bristles present, blunt, the two pairs at posterior angles longest, others subequal in length to postoculars. Wings of fore pair broad, very much narrowed at middle, the scale and the region of the three subbasal bristles brown, remainder colourless; subbasal bristles approximate, equally blunt, forming an almost equilateral triangle; no accessory hairs. Fore tarsus with a minute tooth.

Abdominal bristles mostly blunt: terminal bristles about 1.2 times the length of tube.

Measurements of holotype:—Length 1.63 mm.; head, length 0.209 mm., width 0.194 mm.; prothorax, length 0.156 mm., width (inclusive of coxae) 0.360 mm.; pterothorax, width 0.384 mm.; abdomen, width 0.408 mm.; tube, length 0.132 mm., width at base 0.068 mm., at apex 0.039 mm.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ)	36	51	45	51	50	45	44	32
Width (μ)	32	30	30	33	31	26	22	14

Total length of antenna, 0.354 mm.

Described from one female taken by sweeping, Proserpine, N.Q., November 2, 1912, by Mr. A. A. Girault.

The broad wings, abruptly narrowed at middle, without accessory hairs, and with the subbasal bristles approximate and disposed to form a nearly equilateral triangle, together with the darkly coloured antennæ and the presence of a sense-cone on the inner surface of the third antennal segment, make this species readily distinguishable.

HAPLOTHRIPS ANCEPS sp. nov.

Female (macropteros).—Length about 1.4 mm. Colour blackish brown, with most of fore tibiae, and all tarsi, lemon yellow; antennal segments 3.5 yellow, 4 and 5 very slightly infuseate.

Head about 1.1 times as long as wide, cheeks very slightly arched; vertex slightly produced, the anterior ocellus overhanging, not attaining frontal costa; postocular bristles slightly more than half as long as eyes, blunt. Eyes about 0.4 as long as head, narrower than their interval. Antennæ of normal structure; segment 3 slender and elongate, without sense-cone on inner surface; segments 7 and 8 rather closely united. Mouth-cone normal to genus.

Prothorax smooth, all usual bristles present, blunt, the two pairs at the posterior angles longest and about equal in length to postoculars, the others shorter; anterior marginals half the length of postoculars. Wings of fore pair narrow, sparsely fringed, only slightly narrowed at middle, with about four accessory hairs; scale and the region of the three subbasal bristles slightly browned: subbasal bristles knobbed, disposed on a nearly straight line, the outer bristle much the longest. Fore tarsus with a minute tooth.

Abdomen of normal structure; most bristles knobbed; terminal bristles distinctly longer than tube.

Measurements of holotype:—Length 1.42 mm.; head, length 0.192 mm., width 0.175 mm.; prothorax, length 0.144 mm., width (inclusive of coxæ) 0.260 mm.; pterothorax, width 0.312 mm.; abdomen, width 0.324 mm.; tube, length 0.115 mm., width at base 0.058 mm., at apex 0.032 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	35	46	45	46	45	39	38	27
Width (μ)	33	28	24	30	25	24	20	12

Total length of antenna, 0.321 mm.

Male (macropteros).—Length about 1.2 mm. Colour and structure essentially as in female; fore tarsus with a stout, triangular tooth.

Measurements of allotype:—Length 1.18 mm.; head, length 0.185 mm., width 0.160 mm.; prothorax, length 0.132 mm., width (inclusive of coxæ) 0.257 mm.; pterothorax, width 0.258 mm.; abdomen, width 0.241 mm.; tube, length 0.115 mm., width at base 0.057 mm., at apex 0.029 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	30	41	42	46	44	40	37	25
Width (μ)	29	24	20	26	22	21	18	11

Total length of antenna, 0.305 mm.

Described from six females and nine males, taken by sweeping, at Nelson, N.Q. (type locality), April 2, 4, and 27, 1913; at Proserpine, N.Q., November 2 and 3, 1912; at Quingilli, N.Q., September 13, 1912; and at Hinchinbrook Island, N.Q., July 19, 1912.

The principal diagnostic characters are the colour of the legs and antennæ, the long third antennal segment without a sense-cone on its inner surface, and the well-developed anterior marginal bristles.

HAPLOTHRIPS FROGGATTI sp. nov.

Female (macropterus).—Length about 1.4 mm. Colour dark blackish brown, with fore tarsi yellow and fore tibiæ yellow apically; antennæ brown, segments 1, 2, and 6-8 darkest; 3 paler, particularly along outer surface and at base.

Head as broad as long, with sides very slightly arched; vertex slightly produced, the anterior ocellus overhanging and usually just attaining frontal costa; postocular bristles blunt, a little more than half as long as eyes. Eyes nearly 0.4 as long as head, narrower than their interval. Antennæ of normal structure; segment 3 small, almost exactly as in *H. humilis* (see Proc. Biol. Soc. Wash., vol. xxvii, 1914, pl. iv, fig. 2), without sense-cone on inner surface; segment 4 large; 7 and 8 rather closely united.

Prothorax smooth; all usual bristles present, blunt, the two pairs at posterior angles slightly the longest, others equal in length to postoculars. Wings of fore pair broadened at base and distinctly narrowed at middle; the scale and the region of the three subbasal bristles brown, remainder colourless; subbasal bristles equidistant, arranged nearly on a straight line, the outer longest and less blunt; about 10 accessory hairs. Fore tarsus unarmed.

Abdominal bristles mostly blunt; terminal bristles about 1.3 times as long as tube.

Measurements of holotype:—Length 1.43 mm.; head, length 0.181 mm., width 0.181 mm.; prothorax, length 0.132 mm., width (inclusive of coxæ) 0.269 mm.; pterothorax, width 0.312 mm.; abdomen, width 0.318 mm.; tube, length 0.115 mm., width at base 0.061 mm., at apex 0.033 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	34	45	33	45	42	40	37	25
Width (μ)	30	27	26	31	27	24	19	12

Total length of antenna, 0.310 mm.

Male (macropterus).—Length about 1.2 mm. Almost identical with female in colour and structure; fore tarsus with a stout, triangular tooth.

Measurements of allotype:—Length 1.23 mm.; head, length 0.179 mm., width 0.168 mm.; prothorax, length 0.128 mm., width (inclusive of coxæ) 0.242 mm.; pterothorax, width 0.288 mm.; abdomen, width 0.270 mm.; tube, length 0.115 mm., width at base 0.054 mm., at apex 0.030 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	31	42	38	47	42	40	35	25
Width (μ)	29	24	24	29	24	20	18	12

Total length of antenna, 0.300 mm.

Described from ten females and two males, taken by sweeping grass, at Hughenden, N.Q., July 13 and 14, 1912, and at Pentland, N.Q., December 24 and 26, 1912, and January 6, 1913, by Mr. A. A. Girault.

Named after Walter W. Froggatt, Esq., Government Entomologist, N.S.W., in recognition of his work on Australian Thysanoptera.

LIOTHIRIPS Uzel, 1895.

1895. *Liothrips* Uzel, Mon. d. Ord. Thys., p. 261. (Type not designated; two species included, *L. hradacensis* nov. sp., and *Phlaothrips setinodis* Reuter. Type by present designation, *Phlaothrips setinodis* Reuter.)
1899. *Liothrips* Reuter, Acta Soc. Fauna Flora Fennica, vol. xvii, No. 2, p. 64.
1908. *Phyllothrips* Hood, Can. Ent., vol. xl, No. 9, p. 305. (Type *P. citricornis* sp. nov., by designation and monotypy.)
1909. *Phyllothrips* Hood, Ent. News, vol. xx, No. 1, pp. 30, 31.
1912. *Liothrips* Karny, Trans. Ent. Soc. Lond., 1912, pt. 2, p. 471.
1916. *Liothrips* Watson, Ent. News, vol. xxvii, p. 132.

This genus is evidently one of the dominant types of Thysanoptera in Queensland, and its species will no doubt be found to inhabit the under surface of the leaves of woody plants. The forms which the writer has assigned here are not all typical members of the genus, and it may be necessary in time to remove to another genus those placed under the category "aa" in the key below. Further collecting and much additional material will be required, however, before this and other doubtful points can be settled.

It may not be inopportune to remark that in the key to the North American species of this genus, given in the last paper cited above, its author includes *macconnelli* (a mis-spelling of *mcconnelli*) and *fasciculatus*, both of which were transferred to the genus *Leptothrips* in 1912; that six North American species (*leucogonis*, *castaneæ*, *brevicornis*, *sambuci*, *montanus*, and *varicornis*), originally described in this genus, as well as four others properly referable to it, are omitted entirely; that the new species *flavoantennis* is apparently identical with *citricornis* Hood, described in 1908; and that the description and figure of the new subspecies of *caryæ* Fitch are not sufficient to distinguish it from the typical form, having unfortunately been based merely on teneral material. The described North American species of this genus, as interpreted by the writer, may be listed in alphabetical order as follows:—

1. *brevicornis* Hood, Proc. Biol. Soc. Wash., vol. xxvi, 1913, p. 164.
 2. *caryæ* (Fitch), Third Rept. Nox. Ins. State N. Y., in Ann. Rept. N. Y. State Agr. Soc., vol. xvi, 1856, p. 445 (*Phlaothrips*); Hood, Proc. Biol. Soc. Wash., vol. xxvii, 1914, p. 160, pl. 4, fig. 6.
- L. caryæ floridensis* Watson, Ent. News, vol. xxvii, 1916, p. 130, pl. v, figs. 4-6.

3. *castaneæ* Hood, Bull. Brook. Ent. Soc., vol. x, 1915, p. 76.
4. *citricornis* (Hood), Can. Ent., vol. xl, 1908, p. 305, fig. 15 (*Phyllothrips*).
L. flavoantennis Watson, Ent. News, vol. xxvii, 1916, p. 129, pl. vi, figs. 7-9.
5. *dumosa* (Moulton), Tech. Ser. 12, pt. iii, Bur. Ent., U. S. Dept. Agr., 1907, p. 63 (*Trichothrips illex* var. *dumosa*).
6. *floridensis* (Watson), Ent. News, vol. xxiv, 1913, p. 145, pl. vi, figs. 1-4 (*Cryptothrips*).
7. *fuscus* (Morgan), Proc. U. S. Nat. Mus., vol. 46, 1914, p. 30, figs. 55-57 (*Trichothrips*).
8. *illex* (Moulton), Tech. Ser. 12, pt. iii, Bur. Ent. U. S. Dept. Agr., 1907, p. 62, pl. vi, figs. 47-49 (*Trichothrips*).
9. *leucogonis* Hood, Bull. Brook. Ent. Soc., vol. x, 1915, p. 78.
10. *mexicanus* (Crawford), Pomona Coll. Journ. Ent., vol. 2, 1910, p. 161 (*Liothrips umbripennis* var. *mexicana*).
11. *montanus* Hood, Proc. Biol. Soc. Wash., vol. xxvi, 1913, p. 163.
12. *ocellatus* Hood, Bull. Ill. State Lab. Nat. Hist., vol. viii, 1908, p. 375.
13. *sambuci* Hood, Proc. Biol. Soc. Wash., vol. xxvi, 1913, p. 163.
14. *umbripennis* (Hood), Ent. News, vol. xx, 1909, p. 30, fig. 3 (*Phyllothrips*).
15. *varicornis* Hood, Proc. Biol. Soc. Wash., vol. xxv, 1912, p. 74, fig. 6.

Key to Australian Species.

- a. Fore tarsus of female not toothed ; wings darkly infusate throughout.
 - b. Head about 1.3 times as long as wide, not longer than tube *umbratus* Hood.
 - bb. Head about 1.8 times as long as wide and 1.6 times as long as tube *tenuis* Hood.
- aa. Fore tarsus of female with a stout tooth ; wings clear, or at most slightly infusate at base.
 - c. Head about 1.2 times as long as wide.
 - d. Antennal segments 7 and 8 not compactly united to form a single mass, 8 more than twice as long as greatest width *disjunctus* Hood.
 - dd. Antennal segments 7 and 8 compactly united, forming a single mass, 8 less than twice as long as greatest width *connatus* Hood.
 - cc. Head very slightly, if at all, longer than wide.
 - e. Head slightly longer than wide ; antennæ slender, segment 5 about 2.4 times as long as wide ; prothorax 0.73 as long as head, bristles long and pale, those at the anterior and posterior angles equal in length to eyes *gracilior* Hood.
 - ee. Head slightly wider than long ; antennæ rather stout, segment 5 about 1.7 times as long as wide ; prothorax 0.64 as long as head, bristles short, dark, subequal, and about half as long as eyes *brevidens* Hood.

LIOTHRIPS UMBRATUS sp. nov.

Female (macropterous).—Length about 2.3 mm. Colour dark blackish brown, with articulations of legs, tarsi, most of fore tibiæ, and antennal segments 3-6, yellow ; fore wings darkly infusate, particularly at base and along median line.

Head 1.28 times as long as wide, nearly smooth ; cheeks rounded, converging to the slightly constricted base ; vertex broadly rounded, slightly produced in front of eyes ; postocular bristles pointed, equal in length to eyes. Eyes slightly more than one-third as long as head, not protruding, slightly narrower than their interval. Anterior ocellus overhanging, directed forward. Antennæ of normal structure, about 1.8 times the length of head ; segments 7 and 8 rather more closely united than the others, but not compactly joined ; sense-cones arranged as usual in the genus ;

segments 1 and 2 about concolourous with head, 2 yellow at apex; 3-6 lemon yellow, 6 infusate in apical half; 7 and 8 blackish brown. Mouth-cone broadly rounded, attaining apical fourth of prosternum.

Prothorax about 0.54 as long as head and (inclusive of coxæ) about 2.7 times as wide as median dorsal length; surface smooth, with short median thickening; all usual bristles present, pointed, the outer posterior pair longer than postoculars, the inner posterior pair about equal in length to postoculars, other bristles less than half as long. Wings long, broad, fore pair with about seventeen accessory hairs on posterior margin and with the three subbasal bristles of the same size as postoculars; hind wings clouded along margins and with a dark median line. Fore tarsus unarmed.

Abdomen of normal form and structure. Tube about equal in length to head. Abdominal bristles long, pointed, dark brown in colour, those on segment 9 longer than tube.

Measurements of holotype:—Length 2.29 mm.; head, length 0.307 mm., width 0.240 mm.; prothorax, length 0.164 mm., width (inclusive of coxæ) 0.444 mm.; pterothorax, width 0.480 mm.; abdomen, width 0.480 mm.; tube, length 0.312 mm., width at base 0.112 mm., at apex 0.054 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	60	66	84	81	84	74	69	39
Width (μ)	51	41	41	47	42	41	33	16

Total length of antenna, 0.557 mm.

Described from three females taken by sweeping in jungle at Nelson, N.Q., May 25, 1913, by Mr. A. A. Girault.

A true *Liothrips*, easily known by the long tube and the colouration of the wings and antennæ.

LIOTHRIPS TENUIS sp. nov.

Female (macropterous).—Length about 2.7 mm. Colour dark blackish brown (almost black), with tarsi, apex and inner surface of fore tibiæ, and most of antennal segments 3-6, lemon yellow; fore wings darkly infusate, particularly at base and along median line.

Head 1.8 times as long as wide, nearly smooth; cheeks nearly parallel, constricted near base; vertex not produced; postocular bristles slightly longer than eyes, nearly pointed. Eyes about one-third as long as head, flattened at sides, protruding at posterior angles, slightly narrower than their interval. Ocelli equal in size and equidistant, the anterior ocellus directed upward and not overhanging. Antennæ of normal structure, nearly 1.5 times as long as head; segments 7 and 8 more closely united than the others but not compactly joined; sense-cones arranged as usual in the genus; segments 1, 2, 7, and 8 concolourous with head, 2 slightly paler at apex; 3-6 lemon yellow. 4 and 5 lightly infusate at apex, 6 dark brown in apical two-fifths. Mouth-cone broadly rounded, reaching about half across prosternum.

Prothorax about 0.4 as long as head; surface roughened, and with short median thickening; all usual bristles present, nearly pointed, dark brown in colour, the two posterior pairs longest but decidedly shorter than postoculars, the others

about one-third as long. Wings long and broad, fore pair with about thirteen accessory hairs on posterior margin; subbasal bristles nearly pointed, the outer equal in size to posterior angulars, the other two successively shorter; hind wings clouded and with dark median line. Fore tarsus unarmcd.

Abdomen slender, of normal structure. Tube about 0.6 as long as head. Abdominal bristles long, nearly pointed, dark brown in colour, those on segment 9 shorter than tube; terminal bristles about 0.8 as long as tube.

Measurements of holotype:—Length 2.69 mm.; head, length 0.384 mm., width 0.210 mm.; prothorax, length 0.158 mm., width (inclusive of coxæ) 0.420 mm.; pterothorax, width 0.480 mm.; abdomen, width 0.498 mm.; tube, length 0.240 mm., width at base 0.104 mm., at apex 0.049 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	60	65	85	86	84	78	66	37
Width (μ)	47	38	36	40	37	33	27	15

Total length of antenna, 0.561 mm.

Described from one female taken by sweeping in jungle at Nelson, N.Q., April 12, 1914, by Mr. A. A. Girault.

Easily known by the long head and dark wings.

LIOTHRIPS DISJUNCTUS sp. nov.

Female (macropterous).—Length about 1.9 mm. Colour dark blackish brown, with tarsi, most of fore tibiae, distal ends of middle and hind tibiae, and antennal segments 3-6, lemon yellow; wings almost clear, lightly infusate at base.

Head about 1.2 times as long as wide, entire dorsal surface rather deeply and distinctly reticulate with anastomosing lines, cheeks evenly rounded to eyes and to base; vertex slightly produced; postocular bristles capitate, a little more than half as long as eyes. Eyes about 0.4 as long as head, not protruding, slightly narrower than their interval. Anterior ocellus overhanging, directed forward. Antennæ of normal structure, fully 1.8 times as long as head; segments 7 and 8 more closely united than the others, but not compactly joined; sense-cones arranged as usual in the genus; segments 1, 2, 7, and 8 concolourous with head, 2 paler at apex; 3-6 lemon yellow, the last infusate apically. Mouth-cones broadly rounded, attaining middle of prosternum.

Prothorax about three-fourths as long as head and (inclusive of coxæ) slightly more than twice as wide as long; surface distinctly reticulate with anastomosing lines, and with short median thickening; all usual bristles present, capitate, the pair at posterior angles much the longest and about equal to postoculars. Wings long, broad; fore pair with eight accessory hairs on posterior margin and with the three subbasal bristles capitate, equal, and about the size of anterior laterals. Fore tarsus with a stout, slightly hooked tooth.

Abdomen of normal form and structure. Tube about 0.92 as long as head, sides straight, slightly constricted at apex; abdominal bristles long, pale, capitate, those on segment 9 about three-fourths as long as tube; terminal bristles nearly as long as tube.

Measurements of holotype:—Length 1.85 mm.; head, length 0.253 mm., width 0.208 mm.; prothorax, length 0.192 mm., width (inclusive of coxæ) 0.414 mm.; pterothorax, width 0.450 mm.; abdomen, width 0.480 mm.; tube, length 0.234 mm., width at base 0.095 mm., at apex 0.041 mm.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ)	52	63	70	69	65	64	55	35
Width (μ)	41	37	33	38	37	33	26	13

Total length of antenna, 0.473 mm.

Described from one female taken on Thursday Island, Torres Strait, Q., March 31, 1912, by Mr. A. A. Girault.

Readily known by the characters given in the key.

LIOTHRIPS CONNATUS sp. nov.

Female (macropterous).—Length about 1.6 mm. Colour dark blackish brown, with tarsi, distal ends of all tibiae, and at least the basal portion of antennal segments 3-6, lemon yellow; wings almost clear, lightly infusate at base.

Head about 1.2 times as long as wide, entire dorsal surface rather deeply and distinctly reticulate with anastomosing lines; cheeks evenly rounded to eyes and to base; vertex slightly produced; postocular bristles blunt, slightly longer than eyes. Eyes slightly more than one-third as long as head, slightly if at all protruding, distinctly narrower than their interval. Anterior ocellus overhanging and directed forward. Antennae of nearly normal structure, about one and three-fourths times as long as head, segments 7 and 8 compactly united to form a single mass, 8 short, about 1.4 times as long as wide; sense-cones disposed as usual in the genus; segments 1, 2, 7, and 8 concolourous with head, 2 paler at apex; 3-6 lemon yellow, 4 infusate in distal third, 5 in distal half, and 6 in distal three-fifths. Mouth-cone broadly rounded, attaining middle of prosternum.

Prothorax two-thirds as long as head and (inclusive of coxæ) about 2.1 times as wide as long; pronotum lightly reticulate with anastomosing lines, except at middle, and with short median thickening; all usual bristles present, capitate, the two posterior pairs longest and about equal to postoculars; mid-laterals slightly shorter; the two anterior pairs about half the length of postoculars. Wings long, broad; fore pair with seven accessory hairs on posterior margin and with the three subbasal bristles capitate, equal, and about the size of anterior laterals. Fore tarsus with a long, stout, slightly hooked tooth.

Abdomen of normal form and structure. Tube about 0.73 as long as head, sides straight, slightly constricted at apex; abdominal bristles long, pale, capitate, those on segment 9 nearly as long as tube.

Measurements of holotype :—Length 1.63 mm. ; head, length 0.240 mm., width 0.199 mm. ; prothorax, length 0.161 mm., width (inclusive of coxæ) 0.341 mm. ; pterothorax, width 0.390 mm. ; abdomen, width 0.444 mm. ; tube, length 0.175 mm., width at base 0.083 mm., at apex 0.036 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	48	60	65	62	61	56	47	24
Width (μ)	41	33	29	34	31	33	27	17

Total length of antenna, 0.423 mm.

Described from one female taken by sweeping in forest at Pentland, N.Q., December 24, 1912, by Mr. A. A. Girault.

LIOTHRIPS GRACILIOR sp. nov.

Female (macropterous).—Length about 1.9 mm. Colour dark blackish brown, with tarsi, proximal and distal ends of all tibiae, and basal portions of antennal segments 3-6, yellow ; wings clear.

Head very nearly as wide as long, entire dorsal surface rather deeply and distinctly reticulate with anastomosing lines ; cheeks strongly converging to eyes, nearly parallel posteriorly except for a slight subbasal constriction ; vertex not produced, anterior margin straight and nearly vertical ; postocular bristles long, pale in colour, capitate, equal in length to eyes. Eyes slightly more than one-third as long as head, not at all protruding, equal in width to their interval ; ventral length five-sevenths of dorsal, ventral interval nearly twice the ventral width. Anterior ocellus slightly overhanging, directed forward. Antennæ of nearly normal structure, twice as long as head, segments 7 and 8 compactly united to form a single mass, 8 about 1.67 times as long as wide ; sense-cones disposed as usual in the genus ; segments 1, 2, 7, and 8 concolourous with head ; 2 paler at apex, 3-6 yellow, slightly infusate distally, 4 and 5 irregularly brown in apical half, 6 brown except base. Mouth-cone rounded, nearly attaining base of prosternum.

Prothorax about 0.73 as long as head and (inclusive of coxæ) about 2.3 times as wide as long ; pronotum smooth at middle, margins with faint, anastomosing lines ; median thickening distinct ; all usual bristles present, capitate, the anterior marginals and posterior marginals shorter than the others, which are subequal and nearly as long as postoculars. Wings broad, colourless, fore pair with about fourteen accessory hairs on posterior margin, and with the three subbasal bristles capitate. Fore tarsus with a long, stout, slightly hooked tooth.

Abdomen of normal form and structure. Tube about 0.77 as long as head, sides straight, Abdominal bristles long, pale, capitate, those on segment 9 three-fourths as long as tube.

Measurements of holotype :—Length 1.86 mm. ; head, length 0.250 mm., width 0.245 mm. ; prothorax, length 0.181 mm., width (inclusive of coxæ) 0.415 mm. ; pterothorax, width 0.420 mm. ; abdomen, width 0.522 mm. ; tube, length 0.192 mm., width at base 0.090 mm., at apex 0.042 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	54	72	84	76	69	61	54	30
Width (μ)	45	33	31	33	29	32	28	18

Total length of antenna, 0.500 mm.

Described from one female taken by sweeping in forest at Pentland, N.Q., December 26, 1912, by Mr. A. A. Girault.

LIOTHRIPS BREVIDENS sp. nov.

Female (macropterous).—Length about 1.4 mm. Colour dark blackish brown, with tarsi, distal ends of fore tibiae, and basal portions of antennal segments 3-5, yellow; wings clear.

Head very slightly wider than long, entire dorsal surface deeply and distinctly reticulate with anastomosing lines; cheeks strongly converging to eyes, nearly parallel posteriorly; vertex not or only very slightly produced, anterior margin nearly straight and vertical; postocular bristles short, dark in colour, capitate, half as long as eyes. Eyes nearly 0.4 as long as head, not at all protruding, slightly narrower than their interval; ventral length about five-sevenths of dorsal, ventral width a little less than half of ventral interval. Anterior ocellus slightly overhanging, directed forward. Antennae of nearly normal structure, nearly twice as long as head, segments 7 and 8 compactly united to form a single mass, 8 short, about 1.7 times as long as wide; sense-cones disposed as usual in the genus; segments 1, 2, 7, and 8 concolourous with head, 2 paler at apex; 3 yellow, lightly infuscate distally; 4 and 5 brown, yellow in basal third, 6-8 blackish brown. Mouth-cone pointed, with sides straight, attaining base of prosternum.

Prothorax about 0.64 as long as head and (inclusive of coxæ) about 2.5 times as wide as long; pronotum smooth at middle, margins with strong anastomosing lines; median thickening short and indistinct; all usual bristles present, short, stout, capitate, dark in colour, subequal in length, and half as long as eye. Wings broad, colourless, except at extreme base; fore pair with about nine accessory hairs on posterior margin and with the three subbasal bristles capitate. Fore tarsus with slightly hooked tooth about one-third as long as width of tarsus.

Abdomen of normal form and structure. Tube about three-fourths as long as head, sides straight. Abdominal bristles rather short, brownish, capitate, those on segment 9 half as long as tube; terminal bristles about 0.8 as long as tube.

Measurements of holotype:—Length 1.42 mm.; head, length 0.198 mm., width 0.211 mm.; prothorax, length 0.126 mm., width (inclusive of coxæ) 0.316 mm.; pterothorax, width 0.336 mm.; abdomen, width 0.408 mm.; tube, length 0.150 mm., width at base 0.075 mm., at apex 0.034 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	48	54	60	58	51	48	45	27
Width (μ)	36	31	27	31	30	32	29	16

Total length of antenna, 0.391 mm.

Male (macropterous).—Length about 1.3 mm. Colour and structure essentially as in female, but with the longest bristles on segment 9 of the abdomen about 0.8 the length of tube.

Measurements of allotype :—Length 1.25 mm. ; head, length 0.186 mm., width 0.198 mm. ; prothorax, length 0.128 mm., width (inclusive of coxae) 0.322 mm. ; pterothorax, width 0.326 mm. ; abdomen, width 0.341 mm. ; tube, length 0.139 mm., width at base 0.066 mm., at apex 0.032 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	40	49	54	54	53	48	45	24
Width (μ)	34	28	25	28	28	27	25	15

Total length of antenna, 0.367 mm.

Described from three females and four males taken by sweeping foliage and grass in forest at Pentland, N.Q., December 26, 1912, and January 6, 1913, by Mr. A. A. Girault.

RHYNCHOTHRIPS SOROR sp. nov.

Female (macropterous).—Length about 1.4 mm. Colour dark blackish brown, with tarsi, both ends of middle and hind tibiae, distal portion and inner surface of fore tibiae, and third antennal segment, yellow or ochreous.

Head 1.04 times as long as wide ; cheeks slightly arched, nearly parallel ; lateral portions of occiput reticulate with fine anastomosing lines ; vertex not produced, nearly vertical, its front margin straight ; postocular bristles broadly capitate, two-thirds as long as eyes. Eyes nearly 0.4 as long as head, slightly wider than their interval, rounded and not protruding ; ventral extent much less than dorsal, the length and width equal and about 0.6 of the ventral interval, the inner posterior angle about 90°. Anterior ocellus overhanging and directed forward. Antennae 2.25 times as long as head, almost as in *Rh. dentifer* (see Proc. Ent. Soc. Wash., vol. xiv, 1912, pl. vi, fig. 3), segments 7 and 8 compactly united ; sense-cones short ; formula : 3, 0-1 ; 4, 1-1+1 ; 5, 1-1+1 ; 6, 1-1+1 ; 7 with one on dorsum near apex ; segments 1 and 2, and 4-8 concolourous with head, 2 paler at apex ; 3 ochreous, infuseate apically. Mouth-cone very long, slender, equal in length to dorsum of head, surpassing base of prosternum.

Prothorax along median dorsal line nearly equal in length to head and (inclusive of coxae) 2.1 times as wide as long ; pronotum with short median thickening ; all usual bristles present, pale, similar to postoculars and of about the same length. Pterothorax with sides rather strongly converging posteriorly. Legs moderately short and stout, fore femora longer than head ; fore tarsus with a long, hooked tooth. Wings clear.

Abdomen broad and of normal structure ; tube about 0.83 as long as head, less than twice as long as basal width, and 2.25 times as wide at base as at apex, slightly narrowed to middle and again at apex ; abdominal bristles pale, capitate, those at apex of segment 9 about half as long as tube ; terminal bristles longer than tube.

Measurements of holotype :—Length 1.44 mm. ; head, length 0.187 mm., width 0.180 mm. ; prothorax, length 0.180 mm., width (inclusive of coxæ) 0.378 mm. ; pterothorax, width 0.396 mm. ; abdomen, width 0.414 mm. ; tube, length 0.150 mm., width at base 0.081 mm., at apex 0.036 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	45	57	59	63	57	56	50	34
Width (μ)	34	34	30	33	30	30	24	15
Total length of antenna, 0.421 mm.								

Described from one female taken by sweeping in forest and jungle at Nelson, N.Q., April 27, 1913, by Mr. A. A. Girault.

MESOTHRIPS AUSTRALIÆ sp. nov.

Female (macropterous).—Length about 2.9 mm. Colour dark blackish brown, with fore tibiæ, all tarsi, and basal portions of antennal segments 3-7, yellow ; wings pale fuliginous, with dark median streak extending to middle of fore wings and to near apex of hind wings.

Head 1.68 times as long as wide, broadest across eyes, cheeks nearly straight, slightly converging posteriorly and strongly constricted at base, which is 0.69 of the width across eyes ; dorsal and lateral surfaces nearly smooth, the transverse anastomosing lines faint, with a few rather strong bristles ; vertex conically produced ; postocular bristles slender, pointed, nearly as long as eyes. Eyes large and prominent, one-third as long as head and decidedly narrower than their interval. Ocelli equidistant, the anterior ocellus overhanging and on a line with the base of the first antennal segment. Antennæ of normal structure, about 1.5 times as long as head, formed almost exactly as in *M. jordani* ; sense-cone formula : 3, 1-2 ; 4, 2-2 ; 5, 1-1⁺¹ ; 6, 1-1⁺¹ ; 7 with one on dorsum near apex ; segments 1 and 2 concolourous with head, 2 slightly paler at apex ; 3 lemon yellow, with a small, infusate area near apex ; 4-6 lemon yellow, darkly infusate in distal half ; 7 and 8 brown, the former yellow in basal two-fifths. Mouth-cone short and broadly rounded.

Prothorax large, heavy, and three-fourths as long as head, the breadth across coxæ 1.66 times the length and 2.6 times the apical breadth ; pronotum smooth, with short, median thickening ; all usual bristles present, pointed ; the two anterior pairs short, others about as long as postoculars. Fore legs greatly enlarged, the fore femora longer than and nearly as broad as head, the fore tibiæ about as stout as the middle femora, the fore tarsi with a very large hooked tooth. Fore wings slightly narrowed at middle, with about sixteen accessory hairs on posterior margin, and with the three subbasal bristles very long and pointed ; wings of both pairs pale fuliginous, with dark median streak extending to middle of fore wings and to near apex of hind wings.

Abdomen slender, much narrower than pterothorax, broadest across segment 2. Tube about 0.8 as long as head. All bristles long, pointed, yellow, those at apex of segment 9 fully as long as tube ; terminal bristles brown, about equal in length to tube.

Measurements of holotype :—Length 2.88 mm.; head, length 0.396 mm., width across eyes 0.235 mm., at base 0.162 mm.; prothorax, length 0.300 mm., width (inclusive of coxæ) 0.499 mm.; pterothorax, width 0.540 mm.; abdomen, width 0.462 mm.; tube, length 0.313 mm., width at base 0.109 mm., at apex 0.057 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	60	68	106	105	81	69	61	38
Width (μ)	50	36	50	48	38	31	25	13

Total length of antenna, 0.588 mm.

Male (macropterous).—Length about 2.2 mm. Colour and structure essentially as in female.

Measurements of allotype :—Length 2.24 mm.; head, length 0.342 mm., width across eyes 0.216 mm., at base 0.150 mm.; prothorax, length 0.222 mm., width (inclusive of coxæ) 0.384 mm.; pterothorax, width 0.408 mm.; abdomen, width 0.414 mm.; tube, length 0.264 mm., width at base 0.091 mm., at apex 0.049 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	51	58	93	93	75	60	47	33
Width (μ)	45	33	41	44	34	29	24	13

Total length of antenna, 0.510 mm.

Described from one female and two males taken by sweeping in jungle at Nelson, N.Q., June 2, 1914, and August 31, 1913, by Mr. A. A. Girault.

Very close indeed to *M. jordani*, and perhaps merely a race of that species. The only differences observed lie in colouration of the wings and antennæ, and the longer postocular bristles of *australivæ*.

EUOPLOTHRIPS gen. nov.

(ευοπλος, well-armed ; θριψ, a wood-worm.)

Head much longer than wide and much longer than prothorax, widest across eyes and strongly constricted at base; vertex conically produced, bearing the anterior ocellus at its extremity; cheeks with a few minute bristles. Eyes rather large, rounded, finely faceted, prominent, narrower than their interval. Ocelli anterior in position. Antennæ eight-segmented, formed as in *Mesothrips*. Mouth-cone shorter than its basal width, broadly rounded. Prothorax much shorter than head, strongly widened posteriorly and fully twice as wide across coxæ as at anterior margin, bristles rather short. Fore femora slightly enlarged, with a long tooth near middle of inner surface; fore tibiae with a finger-like projection near middle of inner surface; fore tarsi with a long hooked tooth. Wings of fore pair wide near base, narrower apically, slightly constricted at middle. Abdomen slender, narrower than pterothorax. Tube normal, shorter than head.

Genotype : *Euoplothrips bagnalli* sp. nov.

Related to *Mesothrips*, *Gynaikothrips*, and *Androthrips*, but differing from them and from all other known genera of Thysanoptera in the armature of the fore legs. It is without doubt a gull-making genus.

EUOPLOTHRIPS BAGNALLI sp. nov.

Female (macropterous).—Length about 2.2 mm. Colour dark blackish brown (nearly black), with fore tibiae and tarsi and bases of intermediate antennal segments yellowish; wings fuliginous, darker at base, and with a dark median line.

Head 1.64 times as long as wide, broadest across eyes, cheeks nearly straight, slightly converging posteriorly and strongly constricted at base, which is 0.73 of the width across eyes; dorsal and lateral surfaces nearly smooth, the transverse anastomosing lines faint, three or four minute bristles visible in profile; vertex conically produced; postocular bristles blunt, about half as long as eye. Eyes large and prominent, about 0.36 as long as head and about three-fourths as wide as their interval. Ocelli equidistant, the anterior ocellus overhanging and on a line with the base of the first antennal segment. Antennae of normal structure, formed as in *Mesothrips*, 1.6 times as long as head; sense-cone formula: 3, 1-2; 4, 2-2; 5, 1-1⁺; 6, 1-1⁺; 7 with one on dorsum near apex; segments 1, 2, 7, and 8 concoloured with head, 2 paler at apex; 3 and 4 with pedicels yellow, the remainder of these segments dark fuliginous, paler at apex; 5 yellow in basal third, fuliginous beyond; 6 fuliginous, pedicel paler. Mouth-cone shorter than its basal width, broadly rounded.

Prothorax large, heavy, and 0.61 as long as head, the breadth across coxae 1.84 times the length and about 2.3 times the apical breadth; pronotum smooth, with short median thickening; all usual bristles present, anterior marginals greatly reduced, the others blunt and about as long as postoculars. Fore legs slightly if at all enlarged, the fore femora with a long, straight acute tooth near middle of inner surface; fore tibiae, near middle of inner surface, with a finger-like projection two-fifths as long as femoral tooth bearing a minute bristle at its tip; fore tarsi with a long, hooked tooth. Fore wings slightly narrowed at middle, with about ten accessory hairs on posterior margin, and with the three subbasal bristles blunt and equal in length to postoculars; wings of both pairs pale fuliginous, darker at base and in apical half, and with dark median streak extending to near apex of both pairs.

Abdomen slender, much narrower than pterothorax, broadest across segment 2. Tube about 0.62 as long as head. All bristles long, pointed, yellowish, those at apex of segment 9 nearly as long as tube; terminal bristles brown, about equal in length to tube.

Measurements of holotype:—Length 2.16 mm.; head, length 0.336 mm., width across eyes 0.204 mm., at base 0.148 mm.; prothorax, length 0.206 mm., width (inclusive of coxae) 0.380 mm.; pterothorax, width 0.372 mm.; abdomen, width 0.332 mm.; tube, length 0.208 mm., width at base 0.082 mm., at apex 0.039 mm.

Antennal segments:	1	2	3	4	5	6	7	8
Length (μ)	60	63	83	89	81	69	57	40
Width (μ)	46	35	46	45	36	27	22	12

Total length of antenna, 0.542 mm.

Described from one female taken by sweeping in jungle at Nelson, N.Q., May, 30, 1912, by Mr. A. A. Girault.

Named after Richard S. Bagnall, Esq., of Penshaw, England, in recognition of his work on the Thysanoptera and in appreciation of his many courtesies to the author.

CRYPTOTHIRIPS Uzel, 1895.

1895. *Cryptothrips* Uzel, Mon. d. Ordn. Thys., p. 228. (Type not designated ; 6 species included *nigripes* Reut., *lata* nov. sp., *angusta* nov. sp., *Icarus* nov. sp., *dentipes* Reut., and *bicolor* Heeger.)
1899. *Cryptothrips* Reuter, Acta Soc. Fauna Flora Fennica, vol. xvii, No. 2, pp. 16, 21.
1912. *Cryptothrips* Trybon, Arkiv f. Zool., bd. 7, No. 33, p. 9.
1912. *Cryptothrips* Karny, Marcellia, vol. xi, p. 138.
1914. *Cryptothrips* Karny, Zeitschr. f. wiss. Ins.-Biol., bd. x, p. 294.
1916. *Cryptothrips* Hood, Bull. Brook. Ent. Soc., vol. xi, p. 64. (Type designated as *C. lata* Uzel.)

The four Australian species which the writer has assigned to this genus are closely allied to the forms found in Europe, and have not been assigned here simply through lack of a more appropriate place to put them. The first species is related to *C. latus* Uzel, the second and third to *C. icarus* Uzel, and the fourth to *C. bicolor* (Heeger).

Key to Australian Species.

- a. Head longer than wide.
- b. Head less than twice as long as wide.
- c. Head nearly as wide as long, broadest across eyes ; cheeks straight, strongly converging posteriorly ; eyes directed more nearly forward than laterally, not at all protruding ; median dorsal length of prothorax less than half the length of head *laticeps* Hood.
- cc. Head about 1.6 times as long as wide, as broad in basal third as across eyes ; cheeks sinuate, constricted just behind eyes and again at base ; eyes directed more nearly laterally than forward, rather strongly protruding ; median dorsal length of prothorax more than half the length of head *badius* Hood.
- bb. Head very elongate, fully twice as long as wide *dolichos* Hood.
- aa. Head wider than long ; abdomen nearly black, remainder of body and all appendages yellow *dimidiatus* Hood.

CRYPTOTHIRIPS LATICEPS sp. nov.

Female (macropterous).—Length about 1.8 mm. Colour dark blackish brown, with tarsi, apex of segment 2 of antennæ and base of segments 3, paler ; fore wings brown, darkest at base and becoming quite pale toward apex.

Head smooth, slightly longer than wide, broadest across eyes, cheeks straight and converging to base, which is only 0.8 of the greatest width ; vertex not at all produced ; postocular bristles pointed, about 1.5 times as long as eyes ; all other bristles minute. Eyes small, not protruding, situated on the front, rather than the lateral, part of the head, broader on dorsal than on ventral surface, and, as seen from above, quadrangular in form. Ocelli of posterior pair widely separated. Antennæ of normal structure, almost exactly as in *C. longiceps* (see Proc. Ent. Soc. Wash., vol. xiv, No. 3, 1912, pl. viii, fig. 5). Mouth-cone broadly rounded, nearly attaining posterior margin of prothorax.

Prothorax along median dorsal line less than half the length of head, with slight median thickening ; all usual bristles present, pointed, the outer posterior pair longest, anterior marginals shortest and weakest. Fore tarsus unarmed. Fore wings rather broad and of equal width throughout, with about 12 accessory hairs.

Abdomen rather stout and heavy. Tube about 0·7 as long as head, sides straight. Bristles long, dark, and prominent, those at apex of segments 7 and 9 equal in length to tube and to terminal bristles.

Measurements of holotype :—Length 1·82 mm. ; head, length 0·290 mm., width 0·262 mm. ; prothorax, length (along median dorsal line) 0·122 mm., width (inclusive of coxæ) 0·354 mm. ; pterothorax, width 0·414 mm. ; abdomen, width 0·462 mm. ; tube, length 0·210 mm., width at base 0·090 mm., at apex 0·048 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	45	63	84	75	66	60	41	39
Width (μ)	44	34	30	35	33	33	25	17

Total length of antenna, 0·473 mm.

Male (macropterous).—Length about 1·9 mm. Almost identical with female in colour and structure, but with segments 3 and 4 of antennæ, and apex of segment 2, yellowish ; fore tibiae yellow toward apex, and fore tarsi yellow, armed with a stout triangular tooth ; pterothorax and fore femora enlarged, the former with strong median thickening ; scale at base of tube prominent.

Measurements of allotype :—Length 1·86 mm. ; head, length 0·283 mm., width 0·236 mm. ; prothorax, length 0·163 mm., width (inclusive of coxæ) 0·384 mm. ; pterothorax, width 0·420 mm. ; abdomen, width 0·510 mm. ; tube, length 0·224 mm., width at base 0·114 mm., at apex 0·047 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	45	63	91	80	78	69	43	42
Width (μ)	44	33	30	34	32	30	22	16

Total length of antenna, 0·511 mm.

Described from one female and one male, taken by “sweeping top of Pyramid Mt., 3,000 ft., Casuarina and bushes,” Nelson, N.Q., August 7, 1912, by Mr. A. A. Girault.

Strictly congeneric with *C. latus* and its allies, but remarkable for the anteriorly broadened head.

CRYPTOTHRIPS BADIUS sp. nov.

Female (apterous).—Length about 2·1 mm. Colour uniform dark blackish brown, with tarsi, articulations of legs, apex of segment 2 of antennæ and base of segment 3, yellow or yellowish.

Head about 1·65 times as long as wide, sides and occiput with anastomosing lines, sides sinuate, narrowed equally behind eyes and at base, and as wide in intermediate portion as across eyes ; postocular bristles pointed, longer than eyes, and situated close to their inner posterior margins ; other bristles minute. Eyes prominent and protruding, about one-fifth as long as head and a little more than half as wide as their interval. Anterior ocellus minute, posterior ocelli wanting. Antennæ long and slender, about 1·8 times as long as head, structure normal to genus ; segment 3 with one sense-cone on inner and one on outer surface. Mouth-cone short and broadly rounded.

Prothorax with anastomosing lines along posterior margin and with a long, distinct, median thickening; all bristles pointed and moderate in size, the two posterior pairs longest and strongest, the anterior marginals greatly reduced. Pterothorax reduced. Fore tarsus unarmed.

Abdomen stout, heavy, much broader than pterothorax. Tube about three-fourths as long as head and about 2.6 times as wide at base as at apex, sides concave; all bristles yellowish, pointed, the terminal bristles shorter than tube.

Measurements of holotype:—Length 2.08 mm.; head, length 0.348 mm., width 0.211 mm.; pterothorax, length 0.192 mm., width (inclusive of coxæ) 0.372 mm.; pterothorax, width 0.360 mm.; abdomen, width 0.552 mm.; tube, length 0.264 mm., width at base 0.118 mm., at apex 0.044 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	63	69	104	104	96	72	68	48
Width (μ)	51	39	35	37	33	29	27	15

Total length of antenna, 0.624 mm.

Male (apterous).—Very similar to female in colour and structure, but with the fore tarsus armed with a stout triangular tooth and the tube with a prominent "scale" at base.

Measurements of allotype:—Length 1.75 mm.; head, length 0.305 mm., width 0.200 mm.; prothorax, length 0.169 mm., width (inclusive of coxæ) 0.236 mm.; pterothorax, width 0.324 mm.; abdomen, width 0.468 mm.; tube, length 0.220 mm., width at base 0.099 mm., at apex 0.045 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	57	63	94	94	90	69	61	42
Width (μ)	47	36	35	34	32	28	25	13

Total length of antenna, 0.570 mm.

Described from two females and three males, taken by sweeping in forest, Nelson, N.Q., January 29, August 27-28, October 9, and November 2, 1912, by Mr. A. A. Girault.

Very close to *C. icarus*, but easily known by the longer head and the different coloration.

CRYPTOTHRIPI DOLICHOS sp. nov.

Male (apterous).—Length about 2.1 mm. Colour light yellowish brown, with last four segments of abdomen nearly black.

Head very long and slender, 2.1 times as long as wide, sides sinuate, narrowest a little behind eyes and narrowed again at base, smooth above, cheeks with several rather strong bristles; vertex not produced; postocular bristles long, pointed; another pair of strong bristles between and near eyes. Eyes small but prominent and strongly protruding, only about one-sixth the length of head and less than half as wide as their interval. Ocelli wanting. Antennal segment 1 elongate, equal in length to 2; remaining segments wanting in the unique type.

Prothorax along median dorsal line about 0.4 the length of head, without median thickening; anterior marginal bristles wanting, all others present, pointed, the posterior pairs much the longest. Fore tarsus with a stout, slightly curved tooth. Wings wanting.

Abdomen stout and heavy. Tube about 0.7 as long as head, sides straight. Abdominal bristles long, pointed, yellowish, those at apex of segment 9 about 0.6 the length of tube.

Measurements of holotype:—Length 2.52 mm.; head, length 0.456 mm., width 0.216 mm.; prothorax, length 0.181 mm., width (inclusive of coxæ) 0.427 mm.; pterothorax, width 0.396 mm.; abdomen, width 0.540 mm.; tube, length 0.312 mm., width at base 0.114 mm., at apex 0.051 mm.

Antennal segments: 1, length 69μ , width 48μ ; 2, length 72μ , width 39μ ; remainder of antenna wanting.

Described from one male taken by "sweeping floor of forest, Double Island (mainland)," Queensland, December 24, 1911, by Mr. A. A. Girault.

The decidedly anomalous character of this species seems to warrant its description at the present time, even from a specimen as poorly preserved as the type. While the unusual colouration may not perhaps be normal, the very long, slender head and the small, protruding eyes mark it at once as very distinct. It is a true *Cryptothrips*, as that genus is at present interpreted, and is allied to Uzel's *icarus*.

CRYPTOTHRIPS DIMIDIATUS sp. nov.

Female (apterous).—Length about 1.4 mm. Head and thorax yellow, the former darker and the latter washed at sides with brown; legs and antennæ lemon yellow, the latter with segments 7 and 8 (rarely 5-8) infusate; abdomen black.

Head nearly smooth, about 1.16 times as wide as long, narrowed posteriorly; vertex flat and evenly declivous; postocular bristles about as long as dorsal length of eyes, pointed; another pair of pointed bristles about half as long between and near eyes. Eyes scarcely protruding, small and very widely separated, produced posteriorly on ventral surface of head. Ocelli wanting, or only minute anterior ocellus present. Antennæ of the same general structure as in *C. gilvipes* (see Proc. Biol. Soc. Wash., vol. xxvii, 1914, pl. v, fig. 4), but stouter and with the intermediate segments more rounded; segment 3 with one sense-cone on inner and one on outer surface. Mouth-cone short and broadly rounded.

Prothorax with all usual bristles present, pointed, the two posterior pairs about equal in length to postoculæ; midlaterals, anterior laterals, and anterior marginals successively shorter. Pterothorax small and narrow. Fore tarsus unarmed.

Abdomen stout, heavy, much broader than pterothorax. Tube about three-fourths as long as head, twice as wide at base as at apex, sides parallel in basal fifth, thence converging to apex; all bristles brown, pointed, the terminal bristles shorter than tube.

Measurements of holotype :—Length 1.38 mm. ; head, length 0.190 mm., width 0.221 mm. ; prothorax, length 0.144 mm., width (inclusive of coxæ) 0.290 mm. ; pterothorax, width 0.312 mm. ; abdomen, width 0.468 mm. ; tube, length 0.145 mm., width at base 0.084 mm., at apex 0.042 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	45	54	69	66	63	57	44	31
Width (μ)	44	37	30	32	31	30	24	14

Total length of antenna, 0.429 mm.

Male (apterous).—Very similar to female in colour and structure, but with the fore tarsus strongly toothed and the pronotum with a short, dark, median thickening.

Measurements of allotype :—Length 1.03 mm. ; head, length 0.150 mm., width 0.181 mm. ; prothorax, length 0.130 mm., width (inclusive of coxæ) 0.240 mm. ; pterothorax, width 0.228 mm. ; abdomen, width 0.312 mm. ; tube, length 0.108 mm., width at base 0.069 mm., at apex 0.034 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	36	45	51	50	49	45	33	26
Width (μ)	36	31	27	28	29	27	22	13

Total length of antenna, 0.335 mm.

Described from six females and one male, all taken by Mr. A. A. Girault by sweeping in forest, at Proserpine, N.Q. (type locality), November 2 and 3, 1912 ; at Nelson, N.Q., May 29, 1913, and at Pentland, N.Q., January 8, 1913.

Easily known from *dentipes*, *gilvipes*, and *bicolor*, its closest allies, by its small size, short head, and colour.

PHAULOTHIRIPS gen. nov.

(*φαῦλος*, good-for-nothing ; *θρίψ*, a wood-worm).

Head elongate, rectangular, much longer than wide, and fully twice as long as median dorsal length of pronotum, slightly elevated along posterior portion of median line ; vertex not produced, though overhanging, with a pair of prominent forwardly directed bristles lateral of median ocellus ; cheeks straight and parallel, with a pair of long lateral bristles behind eyes ; postocular bristles long. Antennæ slender, eight-segmented, segments 4-7 (particularly 5 and 6) prolonged on ventral surface at apex ; segment 3 longest ; 7 and 8 not closely united. Eyes small, less than one-fourth as long as head. Anterior ocellus directed forward and upward. Mouth-cone not as long as width at base, semicircular at apex, about attaining middle of prosternum. Prothorax more than two and one-half times as wide across coxæ as median length of dorsum ; anterior margin of pronotum deeply, roundly emarginate and somewhat thickened ; the two pairs of bristles at posterior angles long, others minute. Fore tarsi (at least in the male) strongly armed. Wings long, broad, not narrowed at middle. Abdomen broad and heavy. Tube much shorter than head, constricted at apex.

Genotype : *Phaulothrips vuilleti* sp. nov.

Suggestive in many ways of *Diceratothrips*, from which it may be known by the longer head and the broad, deeply emarginate prothorax. The thickening of the anterior margin of the pronotum is an interesting character which occurs also in the Neotropical genus *Dichætothrips*.

PHAULOTHRIPS VUILLETI sp. nov.

Male. (*macropterus*).—Length about 3·3 mm. Colour dark blackish brown or black, with third antennal segment, fore tarsi, and apex of fore tibiae, yellowish.

Head slightly more than twice as long as wide, sides perfectly straight and parallel; dorsal and lateral surfaces faintly reticulate with anastomosing lines, especially at base; vertex not produced, front broadly emarginate, overhanging insertion of antennae and with a pair of long, strong, forwardly directed bristles each side of emargination and a pair of minute bristles between and below these; postocular bristles much longer than eyes, pointed; cheeks with a pair of lateral bristles (half the length of postoculars) behind eyes. Eyes about one-fifth as long as head and above about as wide as their interval; beneath, half as wide as their interval and with the inner posterior angle acute. Ocelli nearly equidistant, the anterior ocellus directed forward and upward. Antennae slender, 1·72 times as long as head, intermediate segments elongate, sense-cones very short, stout; formula: 3, 1·1; 4, 1·1; 5, 1·1⁺; 6, 1·0⁺; 7 with one on dorsum near apex; segments 1, 2, and 4-8 dark blackish brown, the apex of 2 yellowish; 3 yellow, infusate at apex. Mouth-cone not as long as width at base, semicircular at apex, about attaining middle of prosternum.

Prothorax along median dorsal line about 0·43 as long as head and (inclusive of coxae) about 2·7 times as wide as long; pronotum smooth, with heavy median thickening, and with the deeply emarginate anterior margin somewhat thickened; the two pairs of bristles at posterior angles long, pointed, equal in length to postoculars, other bristles minute. Pterothorax rectangular about equal in width to prothorax. Wings long, broad, not narrowed at middle, lightly washed with brownish. Fore femora enlarged, about as long as head and 0·7 as broad; fore tarsi with a long, stout tooth.

Abdomen broad and heavy. Tube 0·68 as long as head and 2·5 times as long as width at base, which is about 2·4 times the apical. Sides sinuate, the apex constricted. All bristles long and pointed, yellow, those at apex of segment 9 longer than tube; terminal bristles half as long as tube.

Measurements of holotype :—Length 3·29 mm.; head, length 0·588 mm., width 0·284 mm.; prothorax, length along median dorsal line 0·252 mm., width (inclusive of coxae) 0·678 mm.; pterothorax, width 0·672 mm.; abdomen, width 0·732 mm.; tube, length 0·400 mm., width at base 0·160 mm., at apex 0·068 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	96	111	225	174	150	108	72	70
Width (μ)	64	50	48	48	47	42	35	23

Total length of antenna, 1·01 mm.

Described from two males taken by sweeping in forest at Nelson, N.Q., August 7 and November 5-6, 1913, by Mr. A. A. Girault.

Named after the late M. André Vuillet, formerly of the Entomological Station at Paris, France, who was one of the most promising students of the Thysanoptera.

ADIAPHOROTHRIPS GIRAULTI sp. nov.

Male (macropterous).—Length about 3.5 mm. Colour dark blackish brown, with tarsi, knees, part of fore tibiae, and at least the basal portions of antennal segments 3-5 (sometimes 3-6), yellow; wings clear, or yellowish toward base.

Head 1.6 times as long as wide, depressed, broadest across eyes; cheeks narrowed a little behind eyes, roundly broadened at basal third, and with a distinct constriction near base, behind which they are again broadened, surface set with about eight strong parallel lateral bristles, dorsal and lateral surfaces with fine close striæ which become reticulate on posterior portion of occiput; vertex not produced; post-ocular bristles pointed, longer than eyes. Eyes about one-fourth as long as head and two-thirds as wide as their interval, ventral extent slightly less than dorsal. Ocelli widely separated, the anterior ocellus on a line with the posterior margin of first antennal segment; posterior ocelli contiguous to inner margins of eyes. Antennæ slender, about 1.85 times the length of head; segments 3 and 4 subequal in length, 5 slightly shorter; sense-cones short and inconspicuous; formula: 3, 1-1; 4, 2-2; 5, 1-1⁺; 6, 1-0⁺; 7 with one on dorsum near apex; segments 1, 2, 7, and 8 dark blackish brown; 3 and 4 (sometimes only 3) yellow; 5 yellow at base, dark brown beyond; 6 dark brown or with pedicel yellow. Mouth-cone shorter than width at base, semicircularly rounded at apex.

Prothorax about 0.57 as long as head and (inclusive of coxæ) about 2.4 times as wide as long; pronotum smooth, with strong median thickening, and with the anterior border emarginate and thickened; all usual bristles present, pointed, the two posterior pairs about as long as postoculars, others small. Fore legs enlarged; fore femora with a few stout spines on inner surface and on outer basal margin; fore tarsi with a very large hooked tooth which is nearly as long as tarsus. Wings long, broad, of equal width throughout, and with about 42 accessory hairs on posterior margin.

Abdomen large, broad; tube nearly as long as head and about three times as long as its basal width, sides straight. Abdominal bristles long, pointed, pale, those at apex of segment 9 about as long as tube; terminal bristles brown, three-fourths the length of tube.

Measurements of holotype:—Length 3.47 mm.; head, length 0.526 mm., width 0.328 mm.; prothorax, length 0.300 mm., width (inclusive of coxæ) 0.732 mm.; pterothorax, width 0.792 mm.; abdomen, width 0.876 mm.; tube, length 0.480 mm., width at base 0.162 mm., at apex 0.075 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	90	102	165	171	153	126	89	78
Width (μ)	69	51	50	51	44	33	27	21

Total length of antenna, 0.974 mm.

Described from three males taken by sweeping in forest at Nelson, N.Q., February 16, 1911, June 13, 1912, and August 12, 1912, by Mr. A. A. Girault.

A large and conspicuous species, very different from the Bornean *A. simplex*, and one which I take pleasure in naming for Mr. Alexandre A. Girault.

Mr. Bagnall, who described the genus *Adiaphorothrips*, has kindly examined one of the types of *giraulti* and concurs in my assignment of the species to this genus. The shorter tube, the position of the posterior ocelli, and the different proportionate lengths of the third, fourth, and fifth antennal segments make *giraulti* easily recognisable.

LEEUEWENIA CONVERGENS sp. nov.

Female (macropterous).—Length about 3.8 mm. Colour dark brown, with antennæ, tarsi, fore tibiæ, and distal three-fifths of middle and hind tibiæ, clear pale yellow.

Head about 1.8 times as long as wide, broadest at extreme base, the cheeks straight and converging anteriorly, constricted behind eyes; vertex convex, not produced; postocular bristles very short, pointed; surface with asperate, anastomosing lines. Eyes 0.7 as long as their distance from posterior margin of head and 1.6 times as wide as their interval, inner margins straight and converging posteriorly. Ocelli placed far forward, opposite anterior portion of eyes, the anterior ocellus slightly more distant from the posterior pair than these from each other; pigment red. Antennæ slender, one and three-fourths times as long as head; segments 1 and 2 concoloured with head, the apex of 2 paler; remainder clear pale yellow with apical portions of 6 and 7 and all of 8, lightly infuscate; sense-cones very long and slender, fully half the length of the intermediate segments. Mouth-cone very broadly rounded, reaching to posterior third of prosternum.

Prothorax half as long as head, indistinctly and irregularly subreticulate, much smoother than head; one short capitate bristle at anterior angle and a long, stout, capitate one at posterior angle, borne at the apex of a tubercle; midlateral very short, stout; other bristles wanting. Pterothorax broad, sides of metathorax swollen. Wings colourless, slightly narrowing apically, without accessory hairs on posterior margin. Legs moderately short; fore tarsus unarmed.

Abdomen moderately slender, distinctly reticulate at sides and on last three segments; tube exceedingly long and slender, more than three times as long as head and about seventeen times as long as greatest width, surface sparsely and inconspicuously pubescent; posterior margins of tergites 2-8 with two pairs of long, stout, capitate bristles, the lateral pair borne on distinct tubercles; tergite 9 with blunt bristles which are not as long as basal width of tube; terminal bristles moderately long.

Measurements of holotype :—Length 3.82 mm. ; head, length 0.428 mm., width 0.242 mm. ; prothorax, length 0.212 mm., width (inclusive of coxæ) 0.456 mm. ; mesothorax, width 0.516 mm. ; metathorax, width 0.576 mm. ; abdomen, width 0.540 mm. ; tube, length 1.39 mm., width at base 0.083 mm., at apex 0.046 mm.

Antennal segments :	1	2	3	4	5	6	7	8
Length (μ)	54	66	141	121	128	120	75	47
Width (μ)	44	36	28	32	33	34	26	15

Total length of antenna, 0.752 mm.

Described from two females, taken by sweeping in jungle at Nelson, N.Q., May 25 and August 31, 1913, by Mr. A. A. Girault.

Very different from the Javanese *L. gladiatrix* and perhaps generically distinct. The anteriorly converging sides of the head, the long antennæ, and the inconspicuously pubescent tube are the most important differentia. It is without doubt a gall-making species.